REMARKS

By this amendment, the abstract has been amended. Claims 1-10 have been amended. Claims 1-10 remain in the application. Support for the amendments to the claims can be found the specification and drawings. No new matter has been added. Reconsideration, and allowance of the application, as amended, is respectfully requested.

The Abstract

The abstract was objected to as the abstract of the disclosure should not contain any drawing, publication date, the name of the inventor, publication date, filing date. A new abstract of the disclosure is required. Applicant acknowledges the objection to the abstract and in response has provided an amended abstract as presented herein above. In addition, the amended abstract contains less than 150 words. The abstract is now believed in the proper language and format. Withdrawal of the objection to the abstract is respectfully requested.

Objection to the Claims

Claims 1-10 were objected to because of informalities. Applicant acknowledges the objection to claims 1-10 and in response has amended the same to exclude reference numerals from the claims, as presented herein above. Claims 1-10 are now believed to be clear. Withdrawal of the objection to claims 1-10 is respectfully requested.

Rejection under 35 U.S.C. §102

Claim 1 recites a device for navigating an instrument in a body volume that is subject to a spontaneous movement that can be described by a movement parameter (E), comprising:

a) a locating device for measuring a location (r) of the instrument;

b) a sensor device for measuring the movement parameter (E); and

c) a data processing device coupled to the locating device and the sensor device, wherein the data processing device comprises a movement model that describes the spontaneous movement of the body volume as a function of the movement parameter (E), wherein with (i) the aid of the movement model, (ii) a current measured location (r) and (iii) an associated current movement parameter, the data processing device calculates an estimated movement-compensated location ($r + \Delta$), corresponding to the current measured location (r) plus a vectorial displacement (Δ), of the instrument that the instrument would have in a reference phase (E_0) of the spontaneous movement.

Support for the amendments to claim 1 (as well as for amendments to claim 10), can be found in the specification at least on page 2, lines 31-33; page 3, lines 1-7 and 8-16; page 4, lines 28-29; and page 6, lines 1-4 and 6-13, as originally filed.

As presented herein, the device of claim 1 makes it possible to track the movement of an instrument in the body volume with respect to a certain, specified reference phase of the spontaneous movement of the body volume. The effect of the spontaneous movement of the body volume on the instrument is compensated for so that *only* the relative movement, important for navigation, is left over between instrument and body volume. The device requires *only* the movement model stored in the data processing device and also the locating device and the sensor device. A *continuous X-ray fluoroscopic observation* of the instrument or the *preparation of vessel maps* from different heartbeat phases *is*, on the other hand, *unnecessary*. (See the specification, page 3, lines 8-16).

Claims 1 and 7-10 were rejected under 35 U.S.C. §102(b) as being anticipated by **Rasche** (US 6,473,635; herein referred to as **Rasche**). With respect to claim 1, Applicant respectfully traverses this rejection for at least the following reasons.

The PTO provides in MPEP § 2131 that

> *"[t]o anticipate a claim, the reference must teach every element of the claim...."*

Therefore, with respect to claim 1, to sustain this rejection the **Rasche** reference must contain all of the above claimed elements of the claim. However, contrary to the examiner's position that all elements are disclosed in the **Rasche** reference, the latter reference does not disclose a data processing device that comprises "a *movement model* that describes the *spontaneous movement* of the *body volume* as a function of the *movement parameter (E)*, wherein with (i) the aid of the *movement model*, (ii) a *current measured location (r) and* (iii) an associated *current movement parameter*, the data processing device *calculates* an estimated *movement-compensated location* ($\underline{r}$ + $\underline{\Delta}$), corresponding to the current measured location ($\underline{r}$) plus a vectorial displacement ($\underline{\Delta}$), of the *instrument* that the *instrument would have* in a *reference phase* (E_0) of the *spontaneous movement*" as is claimed in claim 1. Therefore, the rejection is not supported by the **Rasche** reference and should be withdrawn.

In contrast, **Rasche** discloses a method and device for determining the position of an instrument in which a position of a catheter in a "3D image data set ... is converted from the accurately measured spatial position of the *catheter and* of the *reference probe*, the selected *3D image data set* and the *information* concerning the *position of the reference probe* relative to the *3D image data set* ... the position of the catheter relative to the reference probe is *determined from* the actually measured spatial *positions* of the *catheter and* the *reference probe*, after which it is taken up in the 3D image data set. (see Rasche, column 5, lines 26-36). Thus, **Rasche** requires a 3D image data set, as well as a reference probe position, in the determination of catheter

position. In addition, Rasche and its disadvantages are discussed in the present application (see the present specification, page 1, lines 23-25).

Accordingly, claim 1 is allowable and an early formal notice thereof is requested. Claims 7-9 depend from and further limit independent claim 1 and therefore is allowable as well. Accordingly, the 35 U.S.C. § 102(b) rejection thereof has now been overcome.

By this amendment, claim 10 has been amended in a similar manner as with respect to the amendments to claim 1. Accordingly, claim 10 is believed allowable for at least the same reasons as those presented herein above with respect to overcoming the rejection of claim 1. Withdrawal of the rejection is respectfully requested.

Rejection under 35 U.S.C. §103

Claims 2-6 were rejected under 35 U.S.C. §103(a) as being unpatentable over **Rasche** (US 6,473,635) in view of **Branham** et al. (U.S. 5,687,737; herein referred to as **Branham**). Applicant respectfully traverses this rejection for at least the following reason. Claims 2-6 depend from and further limit independent claim 1, in a patentable sense, and therefore are allowable as well. The 35 U.S.C. §103(a) rejection thereof has now been overcome. Withdrawal of the rejection is requested.

Conclusion

Except as indicated herein, the claims were not amended in order to address issues of patentability and Applicants respectfully reserve all rights they may have under the Doctrine of Equivalents. Applicants furthermore reserve their right to reintroduce subject matter deleted herein at a later time during the prosecution of this application or a continuation application.

It is clear from all of the foregoing that independent claims 1 and 10 are in condition for allowance. Claims 2-9 depend from and further limit independent claim 1, and therefore are allowable as well.

The amendments herein are fully supported by the original specification and drawings; therefore, no new matter is introduced. An early formal notice of allowance of claims 1-10 is requested.

Respectfully submitted,

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